



(19)

Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 065 725 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
19.05.2004 Bulletin 2004/21(51) Int Cl.7: H01L 27/15, H01L 51/20,
H01L 51/40, H01L 27/00(43) Date of publication A2:
03.01.2001 Bulletin 2001/01

(21) Application number: 00113587.0

(22) Date of filing: 27.06.2000

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SEDesignated Extension States:
AL LT LV MK RO SI

(30) Priority: 28.06.1999 JP 18259899

(71) Applicant: SEL SEMICONDUCTOR ENERGY
LABORATORY CO., LTD.
Atsugi-shi, Kanagawa-ken 243-0036 (JP)(72) Inventors:

- Yamazaki, Shunpei
Atsugi-shi, Kanagawa-ken 243-0036 (JP)
- Mizukami, Mayumi
Atsugi-shi, Kanagawa-ken 243-0036 (JP)
- Konuma, Toshimitsu
Atsugi-shi, Kanagawa-ken 243-0036 (JP)

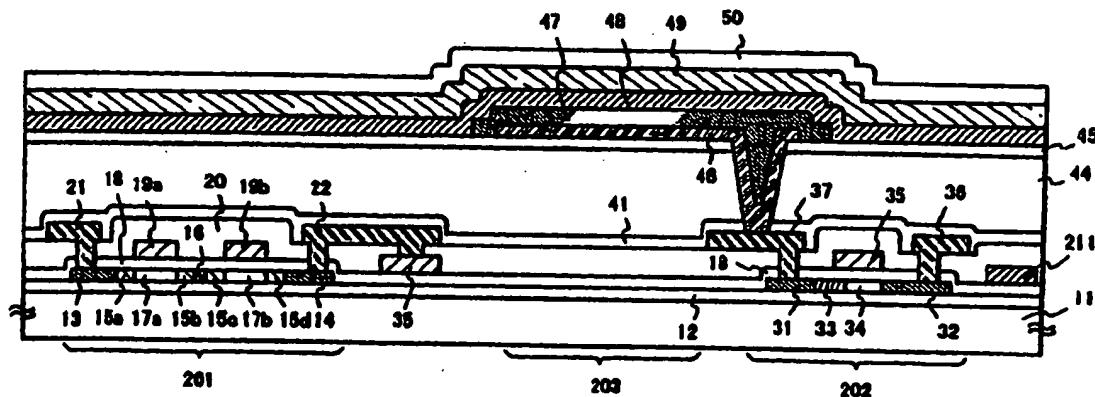
(74) Representative: Grünecker, Kinkeldey,
Stockmair & Schwanhäusser Anwaltssozietät
Maximilianstrasse 58
80538 München (DE)

(54) Method of manufacturing an electro-optical device

(57) An object of the invention is to reduce the manufacturing cost of EL display devices and electronic devices incorporating the EL display devices.

An EL material is formed by printing in an active ma-

trix EL display device. Relief printing or screen printing may be used as the method of printing. Manufacturing steps of the EL layer is therefore simplified and reduction of manufacturing cost is devised.





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 11 3587

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)
X	EP 0 901 174 A (SUMITOMO CHEMICAL CO) 10 March 1999 (1999-03-10) * page 10, paragraphs 72-74 * * page 11, paragraphs 79-82 *	1,6,7,9, 11,13,14	H01L27/15 H01L51/20
Y		8,12,15, 16	
Y	US 5 821 003 A (KIMURA HIROYA ET AL) 13 October 1998 (1998-10-13) * column 6, line 61-65 *	8,15	
X	EP 0 880 303 A (SEIKO EPSON CORP) 25 November 1998 (1998-11-25) * page 10, line 52-58 * * page 11, line 1-18 * * page 13, line 10-19 * * page 14, line 17-19 * * page 5, line 6-18 * * page 6, line 11-13 *	1-7,10	
Y		12,16	
P,X	EP 0 954 205 A (SONY CORP) 3 November 1999 (1999-11-03) * page 3, paragraph 17 * * page 4, paragraphs 21,23,32 * * page 5, paragraph 37 * * page 7, paragraph 51 *	1,6-9, 11,13-15	TECHNICAL FIELDS SEARCHED (Int.Cl.) H01L
X	PATENT ABSTRACTS OF JAPAN vol. 016, no. 084 (E-1172), 28 February 1992 (1992-02-28) & JP 03 269995 A (RICOH CO LTD), 2 December 1991 (1991-12-02) * abstract *	1,6,7	
	---	-/-	
The present search report has been drawn up for all claims			
Place of search THE HAGUE	Date of completion of the search 3 March 2004	Examiner Faou, M	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 00 11 3587

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)
X	<p>PATENT ABSTRACTS OF JAPAN vol. 1998, no. 08, 30 June 1998 (1998-06-30) -& JP 10 077467 A (SUMITOMO CHEM CO LTD), 24 March 1998 (1998-03-24)</p> <p>* abstract *</p> <p>* figure 1 *</p> <p>-----</p>	1,6,7	
TECHNICAL FIELDS SEARCHED (Int.Cl.)			
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	3 March 2004	Faou, M	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : technological background C : non-written disclosure P : intermediate document S : member of the same patent family, corresponding document	
<small>EPO FORM 1503.02B2 (PAC01)</small>			

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 00 11 3587

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
 The members are as contained in the European Patent Office EDP file on
 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-03-2004

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0901174	A	10-03-1999	EP	0901174 A2	10-03-1999
			JP	11176576 A	02-07-1999
			US	6403236 B1	11-06-2002
US 5821003	A	13-10-1998	CA	2163010 A1	21-09-1995
			EP	0702075 A1	20-03-1996
			WO	9525149 A1	21-09-1995
			KR	246496 B1	01-04-2000
			TW	406199 B	21-09-2000
EP 0880303	A	25-11-1998	JP	10153967 A	09-06-1998
			DE	69727212 D1	19-02-2004
			EP	0880303 A1	25-11-1998
			CN	1212114 A ,C	24-03-1999
			EP	1211916 A1	05-06-2002
			EP	1376716 A2	02-01-2004
			EP	1376717 A2	02-01-2004
			WO	9824271 A1	04-06-1998
			US	2003054186 A1	20-03-2003
			US	2002155215 A1	24-10-2002
			US	2001001050 A1	10-05-2001
			US	2002136823 A1	26-09-2002
			US	2002041926 A1	11-04-2002
EP 0954205	A	03-11-1999	JP	11273859 A	08-10-1999
			EP	0954205 A2	03-11-1999
JP 03269995	A	02-12-1991	NONE		
JP 10077467	A	24-03-1998	NONE		

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

EPO FORM P04/98